

平成25年度博士論文

ENABLING ENGLISH CLASSROOM  
DISCOURSE  
BY NON-NATIVE INSTRUCTORS

英語非母語話者教師による教室談話の促進

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## **Abstract**

### **1. Purpose**

The aim of this dissertation is to help minimize unproductive Japanese English education, and enhance English language classroom discourse by non-native English language instructors (NNIs). We planned 3 projects in order to achieve this goal: 1) examining factors that facilitate communicative language teaching (CLT), 2) developing classroom corpora and examine native and non-native English language instructor (NI and NNI) vocabulary item similarities and differences, and 3) utilizing classroom video corpus to train pre-service teachers. The first 2 projects were preliminary ones that would lead to the final project (Project 3).

### **2. Literature**

Literature reveals that there are several constraints that hinder the use of communicative language teaching method and also conditions that facilitate such teaching style by NNIs. The past course of studies to encourage NNIs to implement CLT have not been as productive as the government had expected, and the same results are doomed to recur unless countermeasures are taken. The use of classroom teacher corpora (written text) proved to be effective for novice language teachers, and using audio would have profited the teacher trainees further. However, developing such corpora takes time and resources to achieve, and little research has been done so far.

### **3. Project 1: Identify enabling factors of CLT**

Project 1 asked NNIs in all the senior high schools in Hokkaido, retrieving responses from approximately 34 % of all the senior high schools, and 19 % of all the NNIs. Sequential equation modeling revealed a good fit model that shows factors to facilitate NNIs to implement CLT in their lessons exist. Write-in answers from the participants reveals various expectations and requests of the NNIs toward their students, assistant language teachers (NIs), and English education in Japan.

### **4. Project 2: Examine NI-NNI vocabulary differences and similarities**

Project 2 analyzed 3 NIs and 1 NNI along with 5 NNIs that served as role models recommended by the government. (They used English as a means of instruction and content during their lessons.) Analyses with a benchmark wordlist and a written classroom English corpus revealed core vocabulary items of NI and NNI, their respective lexical types with high keyness that can be attainable for NNIs (and NIs).

### **5. Project 3: Use classroom corpora in training pre-service teachers**

Project 3 trained 25 pre-service English teachers in a university with the classroom corpora. It measured quantitatively the participants' disfluency elements, and feedback elements besides spoken tokens. The pre- and post-test results show significant differences in the participants' use of follow-ups and their speech rate. The written questionnaire collected participants' comments on the effectiveness of the classroom corpus training. NNIs can learn to be relatively more fluent and communicative in their classroom utterances through the use of classroom corpora.

### **6. Conclusion and discussion**

Through the findings of a series of three projects, NNIs will be encouraged and trained to use more English language as a means of instruction and content, and administrators will be more skillful in organizing English training programs for both pre-service and in-service novice teachers. Although my projects may lack the quantity of NIs and NNIs transcribed, the research methods and findings will be of benefit to those involved in English language education and human speech processing community.

## Abstract in Japanese (日本語要旨)

### 1. 目的と重要性

本博士論文の目的は日本における英語教育の「非生産性」を最小化することである。ここで述べる非生産性とは英語で表現する“productive”から派生した“unproductive”という単語の直訳である。“productive”とは英語を発話したり、書いたりする語学の技能を描写する時に用いられる表現である。よって、「非生産性」とは英語を話したり書いたりすることがままならない学習者を産出している英語教育のことを述べている。つまりどのようにしたらこれまでのような日本人母語話者英語教師の教室での英語使用の少なさが改善されるのだろうかという問に対する改善策を探る研究が目的となる。

この目的達成のために3つの研究を行った。得られた知見を日本人母語話者英語教師が授業をする上で、教授内容であると同時に教授のための手段としての英語の使用が促進されるように促され訓練する有効な一手段を提示することを目指した。これにより英語教育行政や英語教師教育(教育実習生や現職の教員、特に英語を使って教授することが不慣れた非母語話者英語教師に対して)の促進が期待されることが本研究の重要性である。

### 2. 文献調査

文献研究で、以下の概要が判明した。1) 英語非母語話者教師の英語使用は文部科学省が期待するほど高くはなく、コミュニケーションな英語教育を阻害する要因が複数存在し、2) それらは教師の内的要因や、生徒たちや、教育現場での外的要因が関わっており、3) そのため、文部科学省が打ち出す、「新」学習指導要領は改訂ごとに「生産性」側面において失敗が予想され、4) 英語母語話者に頼らず非母語話者の英語教授に頼らざるを得ない状況では、英語非母語話者と母語話者との比較による支援が一つの方策として考えられ、5) 教室コーパスを用いた教師教育の方法が有効であるが、6) 前例は少なく、研究すべき点が多いということである。

### 3. 研究1: コミュニカティブな英語教育を可能にする要因の特定

研究1は北海道の全高等学校の英語非母語話者教師にアンケート調査を行った。5段階リッカート法による質問を42問、そして3問の記述回答質問を加えた。北海道の全高校数に占める回収率は約34%、また、全英語非母語話者教師数に占める回収率は約19%であった。文献調査から4つの潜在変数を設定した(「V<sub>1</sub>:教育目標と教授方法」、「V<sub>2</sub>:生徒に対する期待」、「V<sub>3</sub>:教育環境」、「V<sub>4</sub>:コミュニケーションな教授実現可能性」)。5段階の質問を各々の潜在変数の測定変数として構造式(モデル)を推定し、構造方程式の解が「良い適応度」を示すようにモデルを設定・同定・推定・適合度検定・再設定した。また、記述式の回答は各質問に対し、回答内容により複数の分類をし、度数分布にして分析を行った。

分析の結果、「良い適応度」を示すモデルの存在が判明した。潜在変数V<sub>1</sub>→V<sub>4</sub>に対する相関関係(標準解で0.78)である。この中で、V<sub>1</sub>に関して相関の高かった測定変数は「日本語を使わないこと(0.69)」、「英語による指示(0.73)」、「英語で生徒とコミュニケーションをとる(0.73)」、「学習者同士でペアワークを英語で行う(0.72)」であり、V<sub>4</sub>に関して相関の高かった測定変数は「オールイングリッシュの授業をする自信(0.59)」、「生徒の実力に合った英語を用いる(0.75)」であった。記述回答に関しては3分野(生徒・外国語指導助手・英語教育全般)に対する要望を求めた。回答中1)生徒に対する期待や要望に関する項目では「英語学習に対するやる気をもって欲しい」という回答が圧倒的に多く(4割近く)、2)外国語指導助手(ALT)に対する期待や要望に関する項目では「英語教育に対し熱意をもって欲しい」や「教授法や授業案作成に関わって欲しい」という回答が多かった。3)英語教育全般に対する期待や要望に関する項目では「時間的余裕」「財政援助」「大学入試の変革」「能力差の少ない小人数教育」を求める声があるということが判明した。

#### 4. 研究 2: 英語母語・非母語話者の語彙の相違点と類似点

研究 2 は英語母語話者・非母語話者教師の教室での語彙調査を行い、その類似点と相違点を探った。英語による授業実現の方向性を探るために英語母語話者教師(NI)と非母語話者教師(NNI)の使用語彙の比較を語彙項目単位で調査した。

調査には 3 名の NI と 1 名の NNI の発話コーパス、文部科学省推薦の 5 名の NNI の英語授業の書き起こし、教室英語のサブコーパス(CE)、を比較材料とし、JACET 8000 という基本語彙リストを語彙項目頻度の比較指標として用い、NI の使用語彙と NNI の使用語彙の比較をした。1 名の NNI に関しては、比較した文科省からの 5 名の NNI との頻度ランク別(最頻度から 1000 ずつ 8 ランク)比較では、6 名の NNI に有意な差が存在せず、発話コーパス中の 1 名の NNI を一般化することにした。その結果、NI と NNI の語彙頻度に関しては両群ともに最頻度 2000 語までは 95 パーセントの出現をし、それより低頻度の語の出現率に関しては急低下を示すこと等が判明した。

また、NI 群と NNI 群に共通する語彙項目(教室英語の核語彙)が存在し、教室英語の核語彙と呼べる語彙項目の存在が分かった。反対に、NI 特有の語彙項目や NNI 特有の語彙項目の存在も確認され、これらの語彙項目は授業における役割の違いによるものであるということが示唆された。

本研究より得られる知見は、NNI は教室英語の核語彙を持ち、NI と違った語彙項目を用いて指導に当たっている訳ではないということ、NI と NNI の語彙項目の差は役割の違いなので、ティームティーチングに頼らない授業を NNI が行う場合は、NI 特有の語彙項目を参考に授業中の発話を検討するとコミュニカティブな授業が可能になり、反対に、NI は NNI の語彙項目を参考に教科書教示的授業を行うことが出来るように研修や指導の参考に出来るということである。

#### 5. 研究 3: 教室コーパスの教育実習生に対する応用の研究

研究 3 は教育実習を控えた学生に対して教室ビデオコーパスを用いた指導を行い、事前時後で模擬授業の発話がどのように改善されるかを調査した。調査には大学生 25 名が参加した。まず、中学校の英語のテキストを用い、自分で立てた教案をもとに 5 人一組で模擬授業を英語で行ってもらった(プレテスト)。授業はビデオ撮りをし、後に自らその映像・録音を基に書き起こしをし、教室談話タグをつけさせた。その後、以下のような措置を講じた。1) 書き起こしにコメントを施し英語表現の工夫を指南、2) 教室ビデオコーパスを見せながらそのテキストを読ませ授業方法の解説。その後、同じグループで再び模擬授業を異なった教案を基に実施し、ビデオ撮りをした(ポストテスト)。プレ・ポストテストとも書き起こしをしたものに、非流暢さを示す 4 つのタグ(「言い淀み(filler)」、「繰り返し(repeat)」、「言い換えし(revision)」、「言い直し(restart)」)と教師室談話タグとして 2 つのフィードバックタグ(「評価(evaluation)」、「補足・付け加え(follow-up)」)を XML 方式で付与し、それらの要素を抽出し、総発話数とともに定量的、定性的に分析を行った。その結果フィードバックの発話と単位時間内での発話量に有意な差があることが判明し、教室ビデオコーパスの教育実習に与える利点を確認された。

#### 6. 結論

3 つの研究により、以下のことが判明した。(1) 英語非母語話者教師が CLT を実施する相関の高い因子が存在する。(2) 英語母語話者・非母語話者教師は教室で決められた役割に基づいて生徒に発話しており、これらは相補的側面が強いが、両者がともに達成可能なものである。(3) 英語非母語話者教師は教室コーパスを用いた指導・訓練で生徒に対するフォローアップが有意に増し、単位時間の発話量も増える。以上の知見から、経験の浅い NNI や教職に就く前の学生たちにも英語での授業が出来るように支援をすることが期待でき、これからの日本の中等教育において、英語を使って授業が出来る NNI の育成に寄与することが考えられる。また、本研究は日本人英語母語話者教師が授業をする上で、英語を教授内容であると同時に教授のための手段としてもよりその使用が促進されるように訓練する有効な一手段を提示するものである。

## **Executive Summary**

### **1. Introduction**

Japanese English education has been criticized for uncommunicative ways to teach English to learners of English (students). Although the government mandates NNIs use the target language, i.e., English (L2 hereafter) in conducting lessons, its nation-wide survey estimated that NNIs who have L2 skills that guarantee L2 language lesson feasible amounted to less than half of the entire number of all the NNIs in this country (MEXT, 2011a, 2011b).

This study seeks measures to enable non-native English language instructors (NNIs) to use classroom English discourse more often and more fluently. The ultimate aim is to improve the unproductive Japanese English language educational situations in terms of communicative language teaching (CLT). We will diagnose the problems with respect to NNIs themselves and the environment they are in, i.e., their workplace, which includes their coworkers, students they teach, and school chores they are obliged to do that are subject-unrelated.

Our study consists of 3 scopes that are represented by 3 projects respectively:

- (1) identifying factors that facilitate CLT,
- (2) assembling non-native English language instructor classroom corpora, proposing analysis methods, and investigating NI and NNI vocabulary differences, and
- (3) examining the effectiveness of non-native English language instructor training using classroom corpora.

### **2. Literature**

We review literature based on the 3 scopes discussed in the previous section; (1) factors to facilitate CLT, (2) NI and NNI classroom corpora, and (3) application of

classroom corpora to teacher education. The literature review on our first scope reveals that there are factors that might affect NNIs' CLT feasibility such as teacher beliefs and teaching/working conditions. Previous studies on our second scope concerning NI-NNI speech give us grounds for developing classroom corpora and the necessity to examine them qualitatively and quantitatively, not much research having been conducted. The review on our final scope that is related to the application of classroom corpora to initial teacher education proved to be effective in enabling novice teachers to acquire discourse markers. However, it needs improvement in that the preceding studies would have been more successful with the use of audio-visual materials besides written texts.

### **3. Identify enabling factors of CLT (Project 1)**

#### **3.1 Research questions**

Based on the literature, we posed the following research question, "What factors predict CLT feasibility?" We hypothesized that there are at least 4 variables surrounding teachers that relate to the likelihood of CLT's success in Japanese HSs: ( $V_1$ ) the teachers' teaching goals and methods, ( $V_2$ ) the teachers' assessment of their students, ( $V_3$ ) the teachers' working conditions, and ( $V_4$ ) the teachers' perception of CLT feasibility. The relationship between these 4 variables and how they predict the likelihood of CLT's success are major interests in Project 1. These variables are not necessarily mutually independent. Do four variables ( $V_1$  through  $V_4$ ) predict CLT feasibility? We consider our research variables latent and the questionnaire items measured variables.

#### **3.2 Survey**

In August and September 2010, we sent survey questionnaires to all public high schools and private high schools in Hokkaido (N=310), asking for the cooperation of up

to 3 teachers of English language whose native language is Japanese. We did not ask for any specific individuals to participate. The survey questionnaire was written and answered in Japanese, and consisted of 47 multiple-choice questions with choices given on a Likert scale of 5, plus 3 open-ended questions that asked for written responses. At the time of the survey, there were approximately 1670 such teachers on Hokkaido Island. Hence we were asking for answers from 930 unspecified teachers out of approximately 1670.

### 3.3 Results

We tested reasonably possible combinations of the 4 variables by specifying the models using sequential equation modeling (SEM) that might show causal relationship between the variables. Tables 1 shows the SEM model fit indices.

**Table 1**

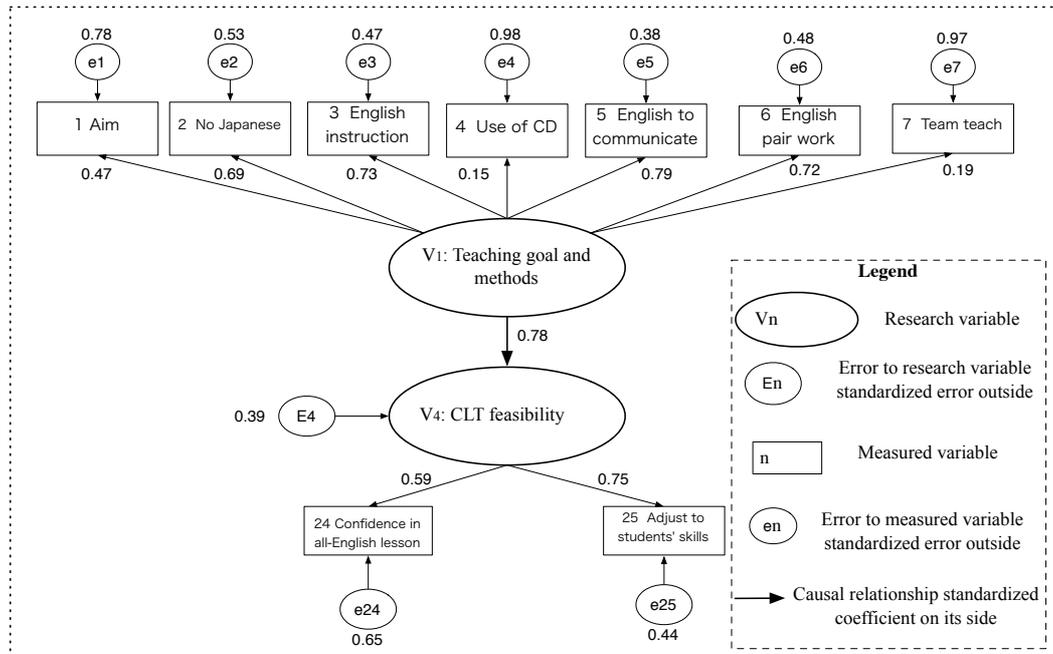
*Fit Indices for SEM Models*

Model (Path coefficient)	Goodness of fit index (cutting point shown below)						
	GFI > .90	AGFI ≥ .90	NFI > .90	NNFI > .90	CFI ≥ .90	RMSEA [90% CI] < .08	SRMR < .08
$V_1 \rightarrow V_4$ (0.78)	<b>0.95</b>	<b>0.91</b>	<b>0.91</b>	<b>0.92</b>	<b>0.94</b>	<b>.07</b> [.05, .09]	<b>.05</b>
$V_2 \rightarrow V_4$ (0.38)	<b>0.91</b>	0.75	0.82	0.69	0.83	.20 [.17, .24]	.13
$V_3 \rightarrow V_4$ (0.44)	0.85	0.79	0.42	0.35	0.46	.12 [NA, NA]	.10
$V_2 \rightarrow V_1$ (0.58)	0.89	0.82	0.83	0.81	0.85	.11 [.10, .13]	.09
$V_3 \rightarrow V_1$ (0.59)	0.84	0.80	0.56	0.57	0.62	.10 [NA, NA]	.09

*Note.* Model  $V_X \rightarrow V_Y$  represents causal relationship where  $V_X$  and  $V_Y$  mean exogenous and endogenous variables respectively. Index values that clear the cutting point are shown in boldface.

GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, NFI = Bentler-Bonett index or normed fit index, NNFI = Tucker-Lewis NNFI, CFI = Bentler's comparative fit index, RMSEA = root mean square error of approximation index, CI = confidence interval, NA = not available, SRMR = the square root of the difference between the residuals of the sample covariance matrix and the hypothesized covariance model.

Table 1 seems to suggest that “Model  $V_1 \rightarrow V_4$ ” is a “good model.” Solving the equations in this model yielded answers, that is, standardized coefficients between variables (Figure 1).



**Figure 1. Good model fit ( $V_1 \rightarrow V_4$  SEM/LV).**

The model  $V_1 \rightarrow V_4$  had the best goodness of fit index (GFI) value among the models we considered.  $V_1$  showed reasonable correlation with measured variables 2 (use of no Japanese), 3 (use of English instructions), 5 (using English to communicate) and 6 (pair work in English) shown as rectangles with their standardized correlation coefficient values below the numbered rectangles.  $V_1$  showed moderate correlation with measured variables 1 and 2, and no correlation for measured variables 4 (use of textbook CD) and 7 (team-teaching).  $V_4$  showed reasonable correlation with measured variables 24 (confidence in all English lessons) and 25 (able to adjust to students' L2 skills).

#### 4. Examine NI-NNI vocabulary differences and similarities (Project 2)

##### 4.1 Research questions

Project 2 posed the following research questions:

- (1) Do the classroom utterances of NIs and NNIs differ in terms of vocabulary

size?

- (2) What vocabularies do NIs and NNIs share?
- (3) What characterizes their different vocabularies?
- (4) What can NNIs learn from NIs, and vice versa?
- (5) How can we encourage and justify the use of English by NNIs in classrooms of English as a foreign language where NIs participate only on limited occasions?

#### **4.2 Materials and methods**

We compared NI and NNI speech using the following 3 materials: (1) transcriptions of English spoken by 3 NIs and 6 NNIs in a language classroom, (2) a collection of classroom English phrases, and (3) a wordlist created from large bodies of written and spoken English.

After transcribing NI, NNI, and CD speech, utterances were separated into lexical tokens. Lexical tokens that were derived forms were grouped into lexical types.

We analyzed the lexical tokens in 3 ways:

- (1) divided NI, NNI, and CE tokens and types into sets based on their commonality,
- (2) compared NI and NNI tokens and types against the benchmark wordlist with regards to frequency rank, and correlation coefficients, and
- (3) compared NI and NNI types by first normalizing frequencies of NI and NNI tokens, identifying NI and NNI types with high keyness, i.e., tokens that occur with unusually high frequency.

#### **4.3 Results**

We found vocabulary items common to both NIs and NNIs. We also extracted lexical types with high keyness for both the NIs and the NNI. Table 2 shows samples

of lexical types with high keyness for the NIs and the NNI.

**Table 2**

*Samples of Lexical Types with High Keyness*

Lexical types are sorted by their frequency relative to their respective maximum frequency values (NI = 840, NNI = 4,475)

NI		NNI	
Type	<i>f</i> [dB]	Type	<i>f</i> [dB]
be	0.00	OK	0.00
you	-2.54	this	-5.17
and	-2.88	your	-6.92
so	-4.63	look	-8.18
I	-4.76	page	-8.26
it	-5.06	all	-8.43
of	-6.76	at	-8.49
that	-6.99	will	-8.66
go	-7.54	please	-8.79
not	-7.78	on	-8.96
he	-8.38	word	-9.14
yes	-8.79	right	-9.36
say	-8.99	question	-9.41
or	-9.56	up	-9.49

**4.4 Conclusion**

This project portrays how spoken classroom English by NIs and NNIs are similar or/and different because NNIs far outnumber NIs in Japanese secondary education (approximately 15 to 1), thus at least some justification is necessary for NNIs to English in their classrooms even without NIs' presence. Classroom corpora were developed and analyzed in order to show what lexical items NIs' and NNIs' use in English language lesson. Results show that NIs and NNIs share core classroom English vocabulary items, and that they have their respective lexical items that are considered to be role-dependent in the co-teaching lesson style.

## **5. Use classroom corpora in training pre-service teachers (Project 3)**

### **5.1 Research questions**

We posed the following research questions, building upon findings that classroom language corpora are effective in language teacher development.

- (1) To what extent do language classroom corpora reduce English language disfluencies, and
- (2) improve the teachers' evaluation and follow-up interactions with students ?

### **5.2 Materials and methods**

25 Japanese college seniors seeking certification as English language teachers participated in our project. These students were taking the same series of teacher-training courses, and were scheduled to start their practice teaching in several weeks. Participants experienced the following chronological sequence:

1. Participants joined with four other participants to form five groups of five participants each.
2. In a regular college classroom, each participant gave a 5-to-10-minute English language lesson at the junior high school level to the four other participants playing the part of students. The instructor's and students' behavior was video-recorded. We refer to this as the pretest lesson.
3. Participants viewed videos of the lesson they taught, transcribed and annotated all speech within their pretest lessons.
4. Participants received transcriptions and annotations corrected by us, plus instructional comments on how to improve their teaching with regards to use of spoken language.
5. Participants read transcriptions from classroom corpora, and viewed video recordings from a classroom corpus.
6. Participants repeated step 2 above. We refer to this as the posttest lesson.

7. Participants answered a survey that included introspective questions on their performance.

We annotated the transcribed speech, and examined the participants' mock lesson speech within the scope of disfluency, classroom discourse, and the number of spoken tokens. We interpreted the annotated transcriptions through the following procedure in order to examine the transcribed speech.

1. Extract the participants' speech that was annotated with the instructor tags.
2. Analyze quantitatively the number of occurrences and spoken tokens for each disfluency element, and classroom discourse element in the pretest and the posttest through one-way repeated measures ANOVA (analysis of variance).
3. Calculate the participants' speech rate in the pretest and the posttest in which we normalize the length of teaching time in seconds, and compare the number of total spoken tokens in the pretest and the posttest.

### 5.3 Results

Table 3 shows descriptive summary of spoken tokens and speech time duration in the pretest and the posttest.

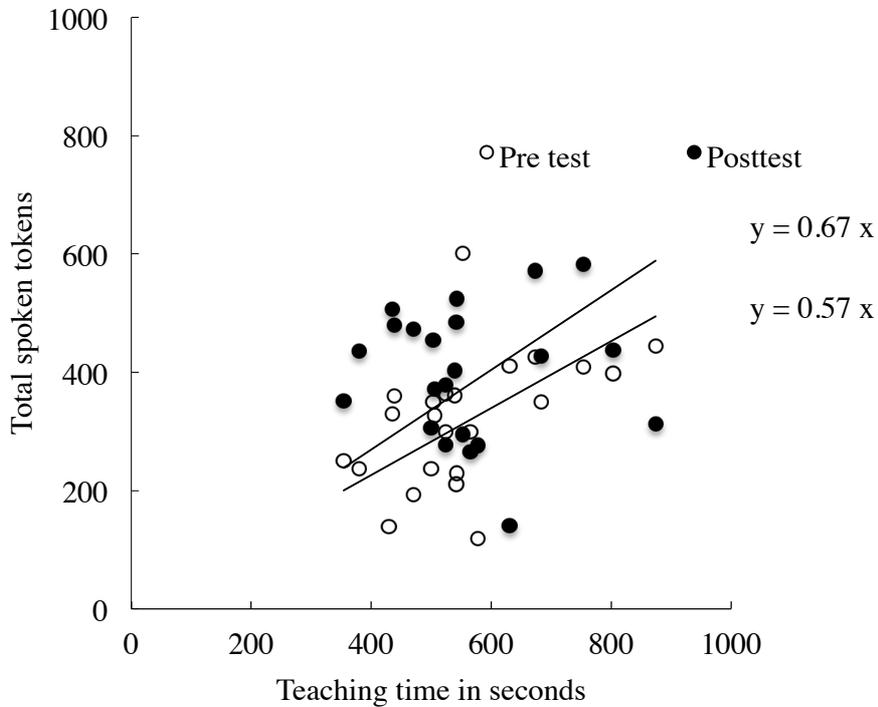
**Table 3**

*Descriptive Summary of Instructors' Spoken Tokens and Speech Time Duration*

	<b>Pre-test</b>	<b>Post-test</b>
Number of instructors ( $n_i$ )	23	22
Number of spoken tokens ( $s_i$ )	7344	8759
Mean $s_i$	319.3	398.1
Standard Deviation of $s_i$	123.9	111.6
Mean teaching time in seconds	556	519
Mean spoken tokens per minute	34.9	46.8

We found significant increase in the follow-up interactions and mean spoken

tokens per minute. Figure 2 shows a scatter plot of teaching time and spoken tokens.



**Figure 2. Scatter plot of teaching time and spoken tokens of each participant in the pretest and the posttest.**

In a written survey after the posttest, participants responded that they felt corpora enhance follow-up feedback in particular and English language fluency in general. Many write-in comments also mentioned the importance of follow-up feedback phrases in particular and of consistently saying simpler phrases in general. The increase of follow-up phrases in the posttest is evident. The conscious use of simpler and often wordier phrases may have contributed to the increase in the number of spoken tokens per unit time in the posttest.

## 6. Conclusion and discussion

Enabling English classroom discourse by non-native instructors is feasible based on the following research finding.

- (1) Factors that predict CLT are (a) use of English instructions (b) not using Japanese, (c) using English to communicate, and (d) pair work in English.
- (2) NNIs share core classroom English vocabulary items with NIs, role-dependent vocabulary items exist that are assumed to be attainable by NNIs.
- (3) Utilizing classroom corpus (both transcriptions, annotations, and audios and video clips) improve pre-service non-native English instructors' classroom fluency and follow-up discourse.

Series of my doctoral projects have at least 3 suggestions for further research that remain unanswered. Firstly, Project 1 that surveyed NNIs in Hokkaido Island may not be broad enough to cover the entire nation. Such survey can be expandable to entail NNIs in as many high schools as this nation holds. Besides, we still have unproved elements revealed in the literature such as difficulty with classroom management and lack of preparation time. We expect other researchers to conduct more thorough survey on NNIs throughout the nation. The questionnaire needs revising so that they will measure NNI CLT feasibility more precisely. Eventually, results of such broader survey will enhance CLT by NNIs in the future. Secondly, Project 2 suggests the NNIs' lexical items compatibility with those of NIs. However, developing classroom corpus still needs accumulating more video recordings and transcriptions of interactions with their learners. Finally, findings in the use of corpora to train pre-service instructors need to be tested upon training in-service teachers who are willing to be "fluent" in classroom English discourse. In conducting such a project, it will be necessary to budget the project in the first place, and ask a lot of in-service NNIs that

can afford enough time to manually transcribe, and annotate their speeches. Such project would provide evidence to analyze furthermore the NNI classroom speech characteristics and second/foreign language learner acquisition.